Appl. No. 10/539,690
Amdt. Dated July 24, 2006
Reply to Office Action of May 3, 2006

Listing of Claims:

1.(currently amended) An electro-optic filament or fibre (10) comprising an elongate core (11) within a volume (12) of polarisable material, and an outer member (13) overlying the said volume, wherein:

(i) the core (11) and the outer member (13) are electrically conducting and respectively connectable to electrical potentials to generate a field (14) therebetween; and

(ii) the polarisable material (12) exhibits an optical effect when subjected to a said field (14) and/or a change in a said field, the said optical effect being visible or otherwise optically detectable externally of the filament or fibre (10),

wherein the resistance of the outer member (13) is inhomogeneous.

2.(original) A filament or fibre according to Claim 1 wherein the outer member (13) is optically transmissive and/or transflective.

3. (previously amended) A filament or fibre according to claim 1 whose subcomponents are flexible, whereby the filament or fibre (10) is flexible.

4.(previously amended) A filament or fibre according to claim 1 wherein the core (11) is or includes a flexible rod made of or from a material selected from the list including:

an electrically conducting metal;

an electrically conducting polymer;

a polyamide coated with a conducting material; or

combinations of two or more aforesaid materials.

5. (previously amended) A filament or fibre according to claim 1 wherein the outer member includes a surface adjacent which the said volume lies.

6. (previously amended) A filament or fibre according to claim 1 wherein the outer member surrounds the said volume.

7. (previously amended) A filament or fibre according to Claim 5 wherein the outer member and the said volume are adhered one to the other.

8. (previously amended) A filament or fibre, according to Claim 6, of generally circular cross-section, wherein the core, the said volume and the outer member are generally mutually concentric.

9.(previously amended) A filament or fibre according to claim 1 wherein the volume (12) of polarisable material includes one or more of:

a liquid crystal material;

a microencapsulated, polarisable ink; or

a "twisting ball" composite.

10.(original) A filament or fibre according to Claim 9 wherein the volume (12) of polarisable material includes a pigment.

11. (original) A filament or fibre according to Claim 10 wherein the pigment is an inorganic phosphor pigment; titanium dioxide; or a mixture thereof.

12. (cancelled)

13. (previously amended) A filament or fibre according to Claim 11 wherein the inhomogeneity of the resistance of the outer member (13) results from one or more of:

(i) one or more discontinuities (13a) in the material of the outer member (13);

(ii) non-uniformity of the thickness (13b) of the outer member (13);

(iii) non-uniformity of the resistivity of the material of the outer member (13);

or

(iv) non-uniformity of the composition of the outer member (13).

14. (original) A filament or fibre according to any preceding claim the core (11) and/or the outer member (13) of which is operatively connected to an electrical potential that varies in dependence on the output or state of a transducer (T).

15.(previously amended) A self-sustaining structure including one or more filaments or fibres (10) each according to claim 1.

16. (original) A structure according to Claim 15 wherein the or each said fibre (10) is interlaced with a further fibre.

17.(previously amended) A structure according to Claim 15 including a plurality of fibres (10) each according to claim 1 woven, knitted or crocheted together.

18. (previously amended) A garment including one or more filaments or fibres each according to claim 1; and/or a structure according to claim 15.